1. In a method for conducting a chemical reaction in the presence of a catalyst the improvement comprising:

providing the catalyst on a support that is thermally and electrically conductive and

supplying an electric current to the catalyst on the support such that the temperature of the catalyst increases.

2. The method of claim 1 wherein the support is selected from the group consisting of conductive graphite, carbon nanotubes, activated carbon granules, and carbonaceous adsorbents

3. The method of claim 2 wherein the support is doped with a metal oxide.

4. The support of claim 3 wherein the support is carbon fiber.

5. The method of claim 1 wherein the catalyst is selected from the group consisting of as Pt, Pd, Ru, Ni, In, P, TiO_2, V_2O_5, MoO_2, WO_3, ZnO, SnO_2, CuO, Cu_2O, FeO, Fe_2O_3, etc.

6. The method of claim 5 wherein the catalyst is present in admixture with a carrier.

7. The method of claim 6 wherein the carrier is selected from the group consisting of graphite powder, graphite or activated carbon powder, Al_2O_3, SiO_2, TiO_2, MgO, ZrO_2 and mixtures thereof.

8. The method of claim 6 wherein the carrier is sintered and has pores from about 1 to about 100 Angstrom in diameter.

9. The method of claim 8 wherein the carrier has a surface area of about 1 to 1,000m^2g.

10. The method of claim 1 wherein the catalyst on the support is in the form of a particle and the chemical reaction is conducted in the presence of a bed of contacting particles.

11. The method of claim 10 wherein the bed of particles is captured between a pair of electrodes.

12. The method of claim 1 wherein the support is a conductive carbonaceous material having a porosity of about 0.005 to about 0.2 micrometers.

13. The method of claim 12 wherein the support possesses a heat conductivity of about 0.8 watt/cm-K to about 23 watt/cm-K.

14. The method of claim 13 wherein the support exhibits an electrical resistance of about 1 to about 100 ohm/square.

15. The support of claim 14 wherein the support exhibits a dielectric constant of about 5 to 6 at about 10^3/hz.

16. The method of claim 1 wherein the catalyst is present on the support in an amount of about one microgram to 10 grams/cm^2.

17. The method of claim 1 wherein the support is a woven or non-woven carbon fiber cloth or felt.

18. The method of claim 17 wherein the carbon fiber cloth or felt is folded or rolled and the reaction is carried out by passing chemical reactants between the folds or rolls in the cloth/felt.

19. The method of claim 1 wherein the support is a polymeric adsorbent.

20. The method of claim 19 wherein the polymeric adsorbent is an ion exchange resin.

21. The method of claim 20 wherein the resin is a bead.

22. The method of claim 1 wherein the catalyst contains copper, zinc and aluminum.

23. The method of claim 1 wherein the electric current that is passed through the catalyst increases the temperature of the catalyst about 50 to 1200 degrees C.

24. The method of claim 1 wherein the chemical reaction is a methanol steam reforming reaction.

25. The method of claim 1 wherein the support is a non-woven carbon fiber plug.

26. The method of claim 1 wherein a plurality of contacting non-woven carbon fiber plugs carrying the catalyst are interposed between a pair of electrodes.

27. A reactor for performing a chemical reaction comprising a chamber including a pair of electrodes that are spaced apart, a catalyst on a thermally and electrically conductive

support provided between the electrodes, and a source of electric current for supplying a current to the electrodes.

28. The reactor of claim 27 wherein the reactor includes an inlet and an outlet and chemical reactants are supplied to the reactor through the inlet and reaction products are removed from the reactor through the outlet.

29. A method for supporting a catalyst comprising:

providing a conductive support, wherein the conductive support is thermally and electrically conductive;

providing a support, wherein said support comprises the conductive support, thereby forming a conductive support;

providing a catalyst; and

dispersing said catalyst in or on the conductive support, thereby supporting said catalyst.

30. A method for supplying energy to a catalyst comprising:

providing a conductive support, wherein the conductive support carbon and/or any suitable thermally and electrically conductive substance, and wherein the conductive support is thermally and electrically conductive;

providing a support, wherein said support comprises the conductive support, thereby forming a conductive support;

providing a catalyst; and

dispersing said catalyst in or on the conductive support; and

providing energy to said conductive support, whereby said energy activates said conductive support thereby providing said catalyst with energy at the local level, wherein said energy provided at local level is sufficient to activate said catalyst.

31. In a method for conducting a chemical reaction in the presence of a catalyst, the improvement comprising:

providing the catalyst on a support that

heats when placed in a microwave field, and

exposing the support to a microwave field to cause the temperature of the catalyst to increase.